APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/658,597	09/11/2000	Steven P. Larky	0325.00418 CD117	4974

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EXAMINER
WEST, JEFFREY R

ART UNIT	PAPER NUMBER
2857	

DATE MAILED: 05/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _01 December 2000_.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-20_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-20_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _11 September 2000_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _2_.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawing in Figure 3 is objected to as failing to comply with 37 CFR 1.84(p)(5) because it includes the following reference sign(s) not mentioned in the description: "318".

2. The drawing in Figure 2 is objected to because the reference numbers "202" and "204" are too close to the edge and are cut-off.

3. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. It is noted that the instant invention contains the same title, specification, and drawings as application number 09/658,894, listed on the information disclosure statement. It is suggested, however, that the applicant include language to the affect of cross-referencing the co-pending application, in place of the reference made on page 1, lines 11-13, as such:

Cross Reference to Related Application

Reference is made to Application Serial No. 09/658,894 entitled,

"UNIVERSAL SERIAL BUS (USB) GOLDEN PRODUCTION TEST MODE",

filed on September 11, 2000, assigned to the assignee of the current

application, and herein incorporated by reference.

Further, since the applicant has filed two applications that claim two

separate and distinct inventions, it is required that the applicant provide a title

different than that of the co-pending application to better describe the claimed

invention.

5. The abstract of the disclosure is objected to because it is less than the

required 50 words. Correction is required. See MPEP § 608.01(b).

6. The disclosure is objected to because of the following informalities:

On page 12, line 20, the DUT is incorrectly labeled "102" and the tester is

incorrectly labeled "104". It is suggested that on line 20, "DUT 102" be

changed to ---DUT 104--- and "the tester 104" be changed to ---the tester

204--- to match the drawings in Figures 1 and 2 and the description on page

12, lines 17-19.

On page 15, lines 3-4, the specification describes that "the decision block

228 may enter the test failed block 224". This description is not in

accordance with Figure 2 that shows no flow path from decision block 228 to

block 224. It is suggested that "the decision block 228 may enter the test

failed block 224" be changed to ---the decision block 230 may enter the test

failed block 224---.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 12, 18, and 19 are rejected under 35 U.S.C. 112, second paragraph, as being vague and indefinite.

Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being vague and indefinite because it recites, "said apparatus is further configured to receive and verify said one or more transmitted test packets", however, there is no previous mention of any transmitted test packets in the parent claims.

Similarly, claim 18 recites, "wherein step (B) further comprises", however, there is no previous mention of a "step (B)" in the parent claim.

Claim 19 is rejected under 35 U.S.C. 112, second paragraph, because it incorporates the faulty language present in parent claim 18.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1, 3-8, and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,784,581 to Hannah in view of U.S. Patent No. 6,345,373 to Chakradhar et al.

Hannah discloses an apparatus and method for operating a Universal Serial Bus (USB) peripheral device as either a master or a slave to permit communication between the USB device and other connected USB devices without requiring an active host controller (column 3, lines 3-13) by providing a peripheral device capable of detecting when there is no host controller present and, when no host controller is detected, emulating the host (column 4, lines 11-14) to issue commands and tokens to control the operation of the other peripherals interfaced to the host emulator (column 4, lines 58-63).

Hannah, however, discloses supplying commands or tokens to the USB devices instead of applying testing commands and also does not teach an apparatus to configure a low speed tester to conduct high-speed tests.

Chakradhar teaches an apparatus (i.e. a test generator), coupled to a circuit under test and a low speed tester, that generates a plurality of test vectors to allow the testing of VLSI circuits at a high speed using the low speed tester (column 8, lines 51-60 and Figure 10) wherein the generation of the test vectors depends on the speed of the slow tester (column 9, lines 10-13). Chakradhar also discloses testing the circuit device by examining the

input reception and output transmission of the vectors (column 10, lines 33-49).

It would have been obvious to one having ordinary skill in the art to modify the invention of Hannah to include applying testing commands using an apparatus for configuring a low-speed tester to conduct high-speed tests, as taught by Chakradhar, since Hannah is silent on the type of commands the master device executes and the combination would have provided a method for insuring accurate operation of the USB system in a way that, as suggested by Chakradhar, would have increased the fault coverage and reduced the application time (column 12, lines 40-42) without extra costs of providing a high-speed tester. Further, since Chakradhar teaches controlling the test generator with the low speed tester (column 9, lines 34-37), it would have been obvious to one having ordinary skill in the art to include controlling the host emulator with the low speed tester because the host emulator is acting as the test generator.

11. Claims 2 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hannah in view of Chakradhar, and further in view of U.S. Patent No. 6,343,260 to Chew.

As noted above, Hannah and Chakradhar teach many of the features of the claimed invention, including a USB system device capable of receiving commands as a slave device and transmitting commands as a master device (Hannah, column 5, lines 16-30) and re-transmitting the received data to

another connected USB device (Hannah, column 3, lines 32-47), but do not teach a method for verifying the device under test during testing or that the test device generate a test packet to be executed.

Chew teaches a universal serial bus test system comprising a USB, a USB host controller coupled to the USB, and a set of USB interfaces which allow communication between a test application and a host controller driver, wherein the test application is configured to examine USB device descriptors and construct corresponding state information for the devices (column 3, lines 47-57). Chew also teaches connecting a plurality of peripheral devices to the USB port (column 4, lines 23-26) and that the testing apparatus (i.e. host device) initiates test data packets (column 5, line 67 to column 6, line 6), including a test application (column 6, lines 53-56), or a suite of tests, to be sent to the USB test device for reception and verification that the USB device can provide appropriate device information (column 7, lines 24-27).

It would have been obvious to one having ordinary skill in the art to modify the invention of Hannah and Chakradhar to include a method for verifying the device under test during testing and specifying that the test device generate a test packet to be executed, as taught by Chew, because the combination would have provided the necessary complex test instructions needed to perform thorough testing and, as suggested by Chew, provided fast responses to user requests as well as insured that the USB devices connected to the USB behave as required by the USB Specification (column 3, lines 58-65).

12. Claims 13, 14, and 20 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Hannah in view of Chakradhar, and further in view of U.S.

Patent No. 6,002,868 to Jenkins et al. and U.S. Patent Application Publication

No. 2002/0011516-A1 to Lee.

As noted above, Hannah and Chakradhar teach all of the features of the

claimed invention except for providing that the tester generate a pass/fail

signal and that the apparatus is configured to perform at least one test of a

plurality of USB 2.0 test modes for use in a production test environment.

Jenkins teaches a test definition tool for the diagnosis of machines in a

factory environment (column 2, lines 14-16) wherein a test dispatcher module

monitors the testing of a plurality of hardware devices including a USB (Table

3) and builds an array of records including whether the current test is running,

the percentage of the test that is complete, and the pass/fail status of the test

(Table 2). Jenkins also teaches implementing a test selection phase to select

between quick, complete, custom, interactive, or unattended test modes

(column 11, lines 54-61).

Lee teaches a smart card virtual hub for use in a manufacturing

environment (paragraph 0018) comprising a USB bus that supports data

exchange between a host computer and a wide range of simultaneously

accessible peripherals (paragraph 0033) wherein the peripherals are slaves

that obey a defined protocol and react to request transactions, including

device details and configuration, sent from the host control (paragraph 0049).

Lee also teaches that the system is operated over USB 2.0 (paragraph 0050) to control the port enable, disable, and suspend modes (paragraph 0082) as well as the full speed or low speed of the signals (paragraph 0081).

It would have been obvious to one having ordinary skill in the art to modify the invention of Hannah and Chakradhar to include providing that the tester generate a pass/fail signal and that the apparatus is configured to perform at least one test of a plurality of USB 2.0 test modes for use in a production test environment, as taught by Jenkins and Lee, because the combination would have provided a means for conveying the result of the test to indicate to the user whether the devices are in correct operable condition, allowed for increased user control of the test based on time constraints or user intervention availability, and, as suggested by Lee, allowed for the testing of higher speed devices because USB 2.0 operates at a faster speed (paragraph 0050).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,606,567 to Agrawal et al. teaches delay testing of high-performance digital components by a slow-speed tester.

U.S. Patent No. 6,393,588 to Hsu et al. teaches a method for testing a Universal Serial Bus hub under the control of a USB host computer comprising a USB bus, standard bus, micro-controller device, and an

emulation device, coupled to the USB under test, that emulates a USB device.

Krstic et al., "Testing High Speed VLSI Devices Using Slower Testers" teaches methods for conducting at-speed testing schemes for slow testers.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. West whose telephone number is (703)308-1309. The examiner can normally be reached on Monday through Friday, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (703)308-1677. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7382 for regular communications and (703)308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

jrw
May 28, 2002

HAL WACHSMAN
PRIMARY EXAMINER
AU2857